

Office Action Summary	Application No.	Applicant(s)
	10/815,401	RAVERDY ET AL.
	Examiner Wutchung Chu	Art Unit 2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 October 0207.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-40 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-40 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date ____	6) <input type="checkbox"/> Other: ____

DETAILED ACTION

Response to Amendment

1. This communication is in response to application's amendment filed on 10/24/2004. Claims 1-40 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1, 3-8, and 10-13, 15-20, and 22-25, 27-32, and 34-36 is rejected under 35 U.S.C. 102(e) as being anticipated by Ayyagari (US20040174829).

Regarding claims 1, Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller (**see paragraph 5**) comprising:

- a frame module (**see paragraph 25 central coordinator(Cco)**) to process a frame containing information regarding a local node in a first network (**see paragraph 70 identity of the CCO**), the information including discovery information (**see paragraph 60 and paragraph 70 new device**) and network state information (**see paragraph 70 a new device that has been selected as the CCo, or by current CCO itself, after network organization is completed**),

the discovery information being represented in a common description (see paragraph 55 line 1 – 9 and figure 5 and figure 6);

- an information module coupled to the frame module to manage the information (see paragraph 44); and
- a communication module coupled to the frame module and the information module to manage communication between the local node and a remote node in a second network using the information (see paragraph 44).

Regarding claim 3, Ayyagari teaches the frame receiver forwards the received remote frame to the communication module if the received remote frame is related to the network communication (see paragraph 88 beacon message).

Regarding claim 4, Ayyagari teaches the frame receiver forwards (see paragraph 89 line 7-10) the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition (see paragraph 89 admission in the network).

Regarding claim 5, Ayyagari teaches the acceptance condition is based on a forwarding number and propagation parameters (see paragraph 79) including a propagation list (see paragraph 76) and a propagation type (see paragraph 89 slot number of a contention channel), the forwarding number and the propagation type being contained in the frame (see paragraph 89 line 1-5 and paragraph 91 line 3 T_discovery_interval).

Regarding claim 6, Ayyagari teaches the information module comprises:

- a collector to collect the information (**see paragraph 113**);
- a translator coupled to the collector to translate the discovery information into the common description (**see figure 6 and paragraph 66 line 10-11**);
- a node selector coupled to the collector to determine if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network (**see paragraph 70 a new device that has been selected as the CCo**); and
- a synchronizer to synchronize the collected information with other information from other local nodes in the first network (**see paragraph 55 and 84 update its discovered node list**).

Regarding claim 7, Ayyagari teaches the information module further comprises:

- an information table to store entries regarding information extracted from a received remote frame (**see paragraph 76 topology table**); and
- an information table updater to update the entries (**see paragraph 84**).

Regarding claim 8, Ayyagari teaches the communication module comprises:

- a usage evaluator to evaluate network usage to determine relative location of the second network based on an interference list from the network state information (**see paragraph 118 line 3-6 and paragraph 147**);
- a channel migration evaluator to evaluate a channel allocation layout (**see paragraph 118 line 6-11 quality indicator**);
- a channel change controller to control a channel change based in the channel allocation layout (**see paragraph 118 line 8-10**); and
- a channel changer to change channel of the local node according to a wireless mode used by the node (**see paragraph 118 line 8-10 and paragraph 121 line 1**).

Regarding claim 10, Ayyagari teaches the discovery information includes information on at least node device (**see figure 1 ref20 ref 30**), node service (**see paragraph 46**), and user (**see figure 1 ref20 ref 30**).

Regarding claim 11, Ayyagari teaches the network state information includes at least one of network configuration (**see paragraph 70**), network status (**see paragraph 64 line 12**), network history, and an interference list.

Regarding claim 12, Ayyagari teaches the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node (**see paragraph 46**).

Regarding claims 13, 15-20, and 22-24, Ayyagari disclose all the limitations as discussed in the rejection of apparatus claims 1, 3-8, and 10-12 and are therefore method claims 13, 15-20, and 22-24 are rejected using the same rationales.

Regarding claims 25, 27-32, and 34-36, Ayyagari teaches a self-organizing ad-hoc communication networks (**see paragraph 4 it is inherent devices (nodes) are computerized and is functioned by a set data**) and disclose all the limitations as discussed in the rejection of apparatus claims 1, 3-8, and 10-12 and are therefore article or manufacture claims 25, 27-32, and 34-36 are rejected using the same rationales.

Regarding claims 37-40, Ayyagari disclose all the limitations as discussed in the rejection of apparatus claims 1-2, 6, and 8 and are therefore apparatus claims 37-40 are rejected using the same rationales.

Claim Rejections - 35 USC § 103

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 9, 14, 21, 26, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari in view of Barber et al. (US20050073979).

Regarding claim 2, Ayyagari teaches the frame module comprises:

- a frame builder to build the frame containing the information (see paragraphs 57-60 and it is inherent for message to contains information);
- a frame transmitter (see paragraph 58) coupled to the frame builder (see paragraphs 57-60 and it is inherent for message to contains information such as allocation frame number, time slot) to transmit the frame (see paragraph 58 a message transmitted by the CCo) to another local node in the first network or the remote node in the second network (see Ayyagari paragraph 54 the node communicates with the CCo directly or through an intermediary node, and registers in the network);
- a frame receiver to receive another frame from another local node in the first network (see paragraph 48 a discovery msg message has been received) or to receive a remote frame from the remote node (see paragraph 24 and 88-89);

and disclose all the subject matter of the claimed invention with the exception of

- a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node.

In the background of Barber et al. the same or similar fields of endeavor teaches the use of polling interaction (see Barber et al. paragraph 12 and figure 12 and paragraph 103 package up traffic between visitor clients). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the polling and packaging of traffic as taught Barber et al. in the discovery in ad-hoc network with central controller of Ayyagari in order to increase efficiency of the transmission system.

Regarding claim 9, Ayyagari disclose all the subject matter of the claimed invention with the exception of the channel migration evaluator evaluates an alternate layout based on a relationship between interference and channel distance. Barber et al. from the same or similar fields of endeavor teaches the use of distance between two radio sources is determinable from signal strength (see **Barber et al. paragraph 84**), and calculated physical positions of each radio and stats about nearby interference (see **Barber et al. paragraph 86**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the determining signal strength, and calculating physical positions of each radio and stats about interference as taught by Barber et al. in the ad-hoc network with central controller of Ayyagari in order to increase efficiency of the transmission system.

Regarding claims 14, 21, 26, and 33, Ayyagari disclose all the limitations as discussed in the rejection of apparatus claims 2 and 9 and are therefore apparatus claims 14, 21, 26, and 33 are rejected using the same rationales.

Response to Arguments

7. **With regard to applicant's remark for claim 1 (page 12),** applicant submit that the Ayyagari does not disclose a network state information. In paragraph 69-70 of Ayyagari, a selected CCo message is transmitted, which indicated the state of the node has change to CCo. In addition paragraph 63-64 of Ayyagari disclose discovery message. Therefore meet the limitations.
8. **With regard to applicant's remark for claim 1 (page 12),** applicant submit that the Ayyagari does not disclose the same managing the information. In paragraph 55 of Ayyagari, every other node listens to these discover msg transmissions and updates its discovered node list, and a topology table is maintained by CCo (see paragraph 75-79), and thus provide managing node list information and meet the limitation. In addition, although the claims are interpreted in light of specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
9. **With regard to applicant's remark for claim 1 (page 13),** applicant submit that the Ayyagari does not disclose an information module to manage the information. In paragraph 44 of Ayyagari, the network organization algorithm and protocol are critical to the providing of connectivity, or networking, of all the nodes in the system. Thus provide manage communication session as disclose in paragraph 43, and which meets the limitation.

10. Applicant's arguments, see applicants remarks on page 13, filed 10/24/2007, with respect to 103 rejection have been fully considered and are persuasive. The 103 rejection of claims 2, 9, 14, 21, 26, and 33 has been withdrawn.

11. Applicant's arguments with respect to claims 2, 9, 14, 21, 26, and 33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dohler et al. (US2004/0131025)

Barber et al. (US2004/0076134)

Stine (US7266085)

Stine (US2003/0033394)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wutchung Chu whose telephone number is 571 270 1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan D. Orgad can be reached on 571 272 7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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